

The fact remains that by the importation of plants from foreign countries (64,652 cases were brought into the U. S. during the season of 1915-16, according to the report of the Fed. Hort. Bd. for year ending June 30, 1916) we are slowly but surely adding to the number of pests which we already have in this country, thereby increasing the burden which future generations will have to bear. And the remedy? A national quarantine of all foreign nursery stock.

EXPLANATION OF PLATE XIV.

Fig. 1, *Blaberus discoidalis*, a tropical roach (natural size).

Fig. 2, *Gryllotalpa gryllotalpa*, the European mole cricket (natural size.)

Fig. 3, *Cholus forbesii*, a tropical orchid weevil, (after H. S. Barber), (enlarged).

LECTOTYPES OF THE SPECIES OF HYMENOPTERA (EXCEPT APOIDEA) DESCRIBED BY ABBÉ PROVANCHER.

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Introduction.

This paper, which is a contribution from the Branch of Cereal and Forage Insects and the Branch of Forest Insects, is largely based on an examination made in May and June, 1915, of the Provancher collections located in the Museum of Public Instruction at Quebec, and in the possession of Mr. W. Hague Harrington and the Department of Agriculture at Ottawa, Canada.

This study was undertaken in order to determine in so far as possible the correct position of the Provancher species in the modern classification and obtain notes which would supplement the original descriptions, and thus facilitate recognition of the species, many of which could not be certainly identified by the original description. Notes of greater or less extent were obtained on all but a few of the species of Hymenoptera, excluding the Apoidea, especial stress being laid, however, upon the sawflies and the parasitic forms belonging to the Ichneumonoidea. In some groups our notes consisted principally of a record of the

condition of the type. The limited time at our disposal made it impossible to attempt to secure full notes on any but the groups in which we were especially interested.

This paper is only a list of the species described by Provancher with the location, condition and designation of the type specimens, and is submitted at this time in order to establish definite premises on which to work and thus make it possible to publish in the future, systematic notes on the species with assurance that other workers will be able to use our remarks and find the same specimens we examined.

The only previous comprehensive study of the Provancher collections was made by Mr. G. C. Davis, who has published the results of his study in two reports†. Davis, however, confined himself entirely to the Ichneumonidæ. The conclusions reached by him regarding the species, in the main, agree with our own, but in a number of instances do not coincide with ours. Davis made no attempt to establish lectotypes for the species, and, therefore, it was often impossible for us to determine on what specimen he based his conclusion.

Provancher's Life and Work.

Practically the first Canadian and in fact one of the first Americans to make a serious and comprehensive study of the Hymenoptera of Canada was Abbé Léon Provancher. Abbé Provancher was a French Canadian who was born, brought up and spent most of his life in the Province of Quebec. He died in 1892, and brief accounts of his life and work were afterward published in a number of journals.* Some years later Abbé Huard began a more extended biography which appeared in various issues of *Le Naturaliste Canadien*,** a magazine founded and edited, until shortly before his death, by Provancher. Since Provancher

†Some notes from a Study of the Provancher Collection of Ichneumonidæ, 1894, Proc. Acad. Nat. Sc. Phil., pp. 184-190.

Review of a few more Provancher types of Ichneumonidæ, 1895, Can. Ent., pp. 287-290.

*See especially Can. Ent., Vol. 24, 1892, pp. 130-131, and Entom. News, Vol. 6, 1895, p. 209, pl. IX.

**This interesting account has never been completed, but Abbé Huard told us it was his intention to complete it and we certainly hope he finds an opportunity to do so. For the parts published, see Nat. Can., 1894, 1895, 1896, 1897, 1898.

began his work in Quebec and spent most of his life there, it is not surprising to know that a large part of his collection came from that region. But later in his life he received much material from other people so that his completed collection included species from many parts of Canada, the United States, Europe and some of the West Indian Islands.

Provancher described about 923 species and a few genera of Hymenoptera and most of this great number are valid. His largest and most comprehensive work on Hymenoptera is *Petite Faune Entomologique du Canada* and its Additions, but besides this he published several shorter papers on Hymenoptera in which new species are described. Considering the time, lack of facilities and literature, and his comparative isolation, Provancher had a very good idea of the limits of a species. The weakest point of his hymenopterological work was his conception of genera and generic limits. Even when we consider the genera he recognized, we often find that he placed the same or closely allied species in widely different genera. Hence, we find, especially in the parasites, that Provancher was often wrong in his generic placement of the species. His descriptions are accurate, and if we remember that the diagnostic characters of that period were limited mostly to colour, they are as satisfactory as those of his contemporaries.

Location of Collections.

Most of Provancher's types are in the Public Museum of Quebec, some are in the collection of Mr. W. Hague Harrington at Ottawa, a few are in the collection of the Canadian Department of Agriculture at Ottawa, while a few others were returned to Ashmead and Coquillett and are now in the United States National Museum. Some few types we were unable to locate. These may have been returned to the collectors.

In 1889 the College de Levis, Levis, Quebec, received a collection of insects from Provancher, and for some time it was thought to contain some of his types. Further investigation tends to prove that this collection was composed entirely of duplicates, and in certain cases these were not correctly determined.

A—Collection in the Public Museum at Quebec.

The collection in the Museum of Natural History, under the

Department of Public Instruction is now housed in the Parliamentary Building in Quebec, and is cared for by Abbé V. A. Huard and his assistant. In this Museum there are really two Provancher collections. The first was purchased in 1877 by the Museum and is known as the 1877 collection (in this paper referred to as the first collection). The other came to the Museum (through purchase) after Provancher's death, and is known as the Dernière Provancher collection, (in this paper referred to as the second collection). Both of these collections are in the cabinets obtained from Provancher, and most fortunately are still left as arranged by him. Each collection contains species not represented in the other, but in cases where the species was found represented in both collections and there was nothing in the description or manuscript notes to prevent, we have chosen as lectotype a specimen from the second collection, because this was the collection retained and used by Provancher until his death, and we are inclined to believe, even though he was not a "type-worshipper," that he would retain the actual type for future reference. Specimens in both collections bear small, yellow labels on which a number is printed. These numbers are species numbers and refer to a catalogue prepared by Provancher. Each insect order in both collections begins with the number one. In the Hymenoptera, therefore, considering both collections as a unit, we often have two, usually widely different species under the same number. There appears to be no instance in which the same species occurs under the same number in both collections. The two collections differ in the style of name label. The name label for the 1877 collection is on blue paper, while that for the second collection is on white paper which has a double red line (the outer being the heavier) around the margin.

The catalogues prepared by Provancher are in the Public Museum, and although they are little more than lists of numbers followed by names, with an occasional mention of locality, they are of some assistance in proving the way in which Provancher treated species reduced by him to synonymy.

A hasty examination of all the insects in both collections showed that they were in remarkably fine condition, considering that they are kept in wooden drawers unprotected by any repellent,

and which are closed by glass tops which set down inside, without any overlapping flange. A careful examination of the Hymenoptera proved that they were free from pests and in good condition. At the time of our visit the Hymenoptera of the 1877 collection were in museum case 35, and those of the second collection in the left hand column of case 46 and two drawers in the left hand column of case 49.

That Provancher had no concrete idea of the value of types is shown by the fact that in no case (with possibly a few exceptions in later years) were his types labeled as such. Furthermore, it is apparent that when he discovered one of his species to be a synonym he often removed the name label from the type and pinned the specimen among others of the species to which he thought it belonged. In other instances, upon deciding that one of his species was synonymous with another not already represented in his collection he removed the original name label and replaced it with what he considered to be the correct one. For example, there is no specimen in his collections labeled *Selandria flavicornis*. After describing this species Provancher concluded that it was the same as *Selandria halcyon*, and an examination of the catalogue shows under 60 the name *Selandria flavicornis* with the word "*flavicornis*" crossed out and above it written the word "*halcyon*." It, therefore, appears certain that the type of *Selandria flavicornis* stands in the collection under the name *Selandria halcyon*. In this case this is also proven by the fact that Provancher instead of supplying a new label just reversed the old label and wrote the name *Selandria halcyon* so that we find on the underside of the label for *S. halcyon* the original label for *Selandria flavicornis*. This one case is sufficient to show how Provancher worked. Many other similar cases could be mentioned. There are many cases, however, where there is no proof, either in the catalogue or in the labeling, that the types of some of Provancher's species which were later suppressed by him stand under the name of the species with which he considered them to be synonymous. In such cases we can only assume, from our knowledge of Provancher's methods, that this is what has taken place.

At no time while studying the collection did we remove any labels, and we were always very careful to put the specimens

back where they came from so that the collection still stands as it was arranged by Provancher. We did not even feel justified in labeling the specimens which we believed to be the type as lectotypes, and will rely in this paper entirely on the name label and the number label for means of correctly identifying the specimens which we believe should stand as type.

B—Harrington Collection.

The types in the Harrington collection are in good condition, and although they usually do not bear the name label in Provancher's writing we were assured by our friend Mr. W. H. Harrington that they were the identical specimens examined by Provancher as could easily be proven by a comparison of the number (they bear in addition to other labels a small, white square on which is written by Harrington a number) with the list as returned by Provancher.

C—Types in Collection of Canadian Department of Agriculture.

The types in the Department of Agriculture are in good condition, and have all been properly labeled as types.

D—Types in U. S. National Museum.

The types in the United States National Museum have all been accessioned and labeled with Museum type numbers.

Plan of Paper.

In submitting this list of the species described by Provancher and presenting notes on the location and condition of the types we have considered that it was much better to arrange them alphabetically as they appear in the final index published by Provancher as a conclusion to his two more important papers on Hymenoptera. We have chosen this method largely because there will be many more changes in generic position than those already published, and also because we do not know when we shall have an opportunity to completely review our notes and definitely assign the species of the genera as at present understood. Practically throughout this paper the word "type" is used in the sense of "lectotype." There are, however, certain cases when there was only one specimen, and there is no doubt that it is the specimen examined by Provancher and is, therefore, certainly the type.

At the time of our visit the type specimens of the species placed by Provancher in the Braconid subfamilies Aphidiinae and Opiinae were not available and the data on these were not secured. We hope, however, to secure and present it later.

Unless otherwise stated, it is to be understood that the specimens are in good condition. The letter (s) stands for the word "script." The numbers on the yellow labels are printed. Whenever possible, we chose as type the specimen which bore the name label written in Provancher's hand.

An Alphabetical List of Species With Designation of Lectotypes.

Acerota opaca. Type.—Yellow label 1381. 2nd Coll. Pub. Mus., Quebec. Two other specimens. Fair.

Acoenites canadensis. Type.—Male, yellow label 375. 2nd Coll. Pub. Mus., Quebec. Lacks antennæ, right fore wing, hind tarsi, abdomen glued on.

Acoenites flavipes. Type.—Female, yellow label 1249. 2nd Coll. Pub. Mus., Quebec.

Acordulocera saginata. Type.—Yellow label 390. 2nd Coll. Pub. Mus., Quebec. Right fore wing gone.

Acothyreus mellipes. Type.—Yellow label 1320. 2nd Coll. Pub. Mus., Quebec. Fair.

Ægilips aciculatus. Type.—Not seen.

Agathis femorator. Type.—Female, yellow label 578. 2nd Coll. Pub. Mus., Quebec. Antennæ wanting.

Agathis nigriceps. Type.—Female, yellow label 1680. 2nd Coll. Pub. Mus., Quebec.

Agathis perforator. Type.—Female, yellow label 577. 2nd Coll. Pub. Mus., Quebec.

Agathis quæditor. Type.—Female, yellow label 576. 2nd Coll. Pub. Mus., Quebec. Lacks head.

Agathis scrutator. Type.—Female, yellow label 1269. 2nd Coll. Pub. Mus., Quebec. Male allotype. Both glued on slips.

Agathis tibiator. Type.—Female, yellow label 579. 2nd Coll. Pub. Mus., Quebec.

Agenia atrata. Allotype.—Male, blue label 125(s). Yellow label 1417. 2nd Coll. Pub. Mus., Quebec.

Agenia perfecta. Type.—Male, yellow label 783. 2nd Coll. Pub. Mus., Quebec. Antennæ wanting beyond 3rd joint. Four hind tibiæ gone.

Agenia rufigastra. Type.—Female, blue label 122(s), yellow label 1419. 2nd Coll. Pub. Mus., Quebec.

Allantus cogitans. Type.—Female, yellow label 44. 2nd Coll. Pub. Mus., Quebec. Lacks right antenna. Two female paratypes. 1st Coll.

Allantus robustus. Type.—Female, Harrington Coll.

Allantus rubricus. Type.—Female, Harrington Coll. Lacks right antenna beyond 3rd joint.

Alomya pulchra. Type.—Not in Pub. Mus., Quebec, unless under name *Phygadeuon pubescens* Prov.

Alysia astigma. Type.—Female, yellow label 1051. 2nd Coll. Pub. Mus., Quebec. Left flagellum gone and only base of right remaining.

Same specimen used as type of *Aspilata astigma*.

Alysia completa. Type.—Female, yellow label 1166. 2nd Coll. Pub. Mus., Quebec.

Alysia fossulata. Type.—Cat. No. 1970, U. S. N. M.

Alysia lucens.—Type.—Female, yellow label 909. 2nd Coll. Pub. Mus., Quebec.

Alysia nigriceps. Type.—Female, yellow label 539. 2nd Coll. Pub. Mus., Quebec. Right flagellum and extreme apex of left gone.

Alysia rubriceps. Type.—Male, yellow label 1052. 2nd Coll. Pub. Mus., Quebec. Same specimen used as type of *Phæno-carpa rubriceps* Prov.

Alyson conicus. Type.—Male, blue label 622(s), yellow label 1449. 2nd Coll. Pub. Mus., Quebec. Lacks most of left flagellum.

Alyson guignardi. Type.—Female, yellow label 1433. 2nd Coll. Pub. Mus.; Quebec.

Alyson triangulifer. Type.—Male, yellow label 1450. 2nd Coll. Pub. Mus., Quebec. Lacks apices of antennæ.

Amblyopone binodosa. Type.—Yellow label 948. 2nd Coll. Pub. Mus., Quebec. Fair. (*Arotropus binodosa*).

Amblyteles bifasciatus. Type.—Yellow label 227. 1st Coll. Pub. Mus., Quebec.

Amblyteles borealis. Type.—Female, yellow label 1002. 2nd Coll. Pub. Mus., Quebec.

Amblyteles indistinctus. Type.—Female, yellow label 185. 2nd Coll. Pub. Mus., Quebec.

Amblyteles macrocephalus. Type.—Male, yellow label 1063. 2nd Coll. Pub. Mus., Quebec. Both antennæ broken, one at 1st flagellar joint, other at middle, 1 anterior, 1 median and 1 hind leg missing.

Amblyteles marginatus. Type.—Female, yellow label 700, 2nd Coll. Pub. Mus., Quebec.

Amblyteles perluctuosus. Type.—Female, yellow label 172. 2nd Coll. Pub. Mus., Quebec.

Amblyteles quebecensis. Type.—Yellow label 181. 2nd Coll. Pub. Mus., Quebec.

Amblyteles stadaconensis. Type.—Male, yellow label 175. 2nd Coll. Pub. Mus., Quebec.

Amblyteles superbus. Type.—Female, Harrington Coll.

Amblyteles tetricus. Type.—Female, yellow label 171. 2nd Coll. Pub. Mus., Quebec.

Anacharis marginata. Type.—Yellow label 1318. 2nd Coll. Pub. Mus., Quebec. Abdomen off but on triangle below.

Anacharis pediculata. Type.—Blue label 762(s), yellow label 1317. 2nd Coll. Pub. Mus., Quebec.

Anacharis subcompressa. Type.—White label "Quebec"; yellow label 616. 2nd Coll. Pub. Mus., Quebec. Abdomen gone.

Anacrabro constrictus. Type.—Male, tag-mounted, yellow label 1690. 2nd Coll. Pub. Mus., Quebec.

Anacrabro lævis. Type.—Female, yellow label 1691. 2nd Coll. Pub. Mus., Quebec.

Andricus gibbosus. Type.—Yellow label 609. 2nd Coll. Pub. Mus., Quebec. Head and abdomen gone. *Cynips (Andricus) gibbosa*—under *Cynips* in list.

Aneurychus foveatus. Type.—Blue label 83; yellow label 1330. 2nd Coll. Pub. Mus., Quebec. Fair.

Aneurychus mellipes. Type.—Yellow label 1331. 2nd Coll. Pub. Mus., Quebec.

Anomalon chlamidatum. Type.—Female, yellow label 1217. 2nd Coll. Pub. Mus., Quebec. Left antenna missing beyond fourth joint and right hind leg at coxa.

Anomalon exile. Type.—Female, yellow label 329. 1st Coll. Pub. Mus., Quebec. Left antenna at 15th joint, left median and both hind legs at coxæ gone; left fore wing gone and right broken at middle.

Anomalon filiforme. Type.—Female, yellow label 1218. 2nd Coll. Pub. Mus., Quebec.

Anomalon nigripennis. Type.—Probably pinned under *Exochilum mundum* Say. 1st Coll. Pub. Mus., Quebec.

Anomalon rufulum. Type and Allotype.—Harrington Coll. Both antennæ, tarsi, except one anterior, broken and lost. Female paratype yellow label 1213, blue label 481. 2nd Coll. Pub. Mus., Quebec.

Anomalon unicolor. Type.—Female, yellow label 1216. 2nd Coll. Pub. Mus., Quebec.

Apanteles acaudus. Type.—Female, yellow label 1285. 2nd Coll. Pub. Mus., Quebec.

Apanteles carpatus. Type.—Apparently destroyed. Pin bearing yellow label 592 in 2nd Coll. Pub. Mus., Quebec.

Apanteles clavatus. Type.—Female, yellow label 642. 2nd Coll. Pub. Mus., Quebec. Badly broken and plastered up with glue. Antennæ, one median and both hind legs gone. Specimen in U. S. N. M. labeled type not type.

Apanteles cinctus. Type.—Female, yellow label 716. 2nd Coll. Pub. Mus., Quebec. Antennæ broken near middle. Faun: 529. Add. S. 388.

Apanteles crassicornis. Type.—Female, yellow label 1269. 2nd Coll. Pub. Mus., Quebec. Antennæ and hind tarsi broken.

Apanteles femur-nigrum. Type.—Male, yellow label 1578. 2nd Coll. Pub. Mus., Quebec. One antenna broken, one front and one hind leg missing.

Apanteles longicornis. Type.—Female, yellow label 1258. 2nd Coll. Pub. Mus., Quebec.

Aphæreta auripes. Type.—Specimen in Public Mus., Quebec, bearing name label in Provancher's hand. Other data not taken. Specimen in U. S. N. M. labeled type, not type.

Aphidaria basilaris. Type.—See Introduction.

Aphidius canadensis. Type.—See Introduction.

Aphidius nigrovarius. Type.—See Introduction.

Aphidius obscurus. Type.—See Introduction.

Aplomerus tibialis. Type.—Female, Ent. Branch, Dept. Agr., Ottawa. Left antenna wanting beyond 5th joint.

Arenetra quebecensis. Type.—Not in Pub. Mus., Quebec, unless under *Lampronota tegularis*.

Arotes superbus. Type.—Not in Pub. Mus., Quebec, unless under name *A. vicinus* Cress.

Artropus binodosus.—See *Amblyoponé*.

Ascogaster rufipes. Type.—Female, yellow label 1254. 2nd Coll. Pub. Mus., Quebec. Rather dirty. (This number in Prov. catalogue refers to *Chelonus rugulosus* Prov. There is no such species.)

Aspilota astigma.—See *Alysia astigma*.

Atractodes autumnalis. Type.—Female, yellow label 706. 2nd Coll. Pub. Mus., Quebec.

Atractodes nigricoxus. Type.—Male, yellow label 984. 2nd Coll. Pub. Mus., Quebec. Left hind tarsus broken at 2nd joint.

Atractodes nitens. Type.—Male, yellow label 695. 2nd Coll. Pub. Mus., Quebec. Female not located in either collection.

Atractodes scaphorus. Type.—Yellow label 307. 2nd Coll. Pub. Mus., Quebec. Badly broken; only thorax, coxæ in part and wings, except right fore wing, remaining.

Aulacus bilobatus. Type.—Male, yellow label 82. 2nd Coll. Pub. Mus., Quebec. Left antenna gone.

(To be continued.)